WHAT IS CLAIMED IS:

1. A method for setting up a cut-through connection through which packets from a source node belonging to a logical network to a destination node belonging to another logical network are transferred, bypassing network-layer processing at at least one boundary between logical networks , comprising the steps of:

receiving a packet from the source node to the destination node or a packet from the destination node to the source node;

detecting the received packet to be a trigger according to at least one of source information and destination information of a layer higher than the network layer included in the received packet; and

instructing, in response to the detecting step, a node capable of initiating a set-up operation to initiate the set-up operation to establish the cut-through connection.

2. The method according to claim 1, wherein the detecting step includes examining information included in a source port field and/or a destination port field of a transport-layer header respectively as the source information and/or the destination information of the layer higher than the network layer.

3. The method according to claim 1, wherein the detecting step includes examining information for identifying a protocol whose layer is higher than a transport layer used in the received packet as the source information and/or the destination information of the layer higher than the network layer.

4. The method according to claim 1, wherein the detecting step includes examining information included in a data field of the layer higher than the network layer for detecting the packet to be a trigger in addition to the source information and/or the destination information.

5. The method according to claim 1, wherein the detecting step includes checking a protocol whose layer is a transport layer used in the received packet for detecting the packet to be a trigger in addition to the source information and/or the destination information.

6. The method according to claim 1, wherein the detecting step further comprises

the step of:

checking whether a cut-through connection corresponding to the received packet has already been set up or not.

7. The method according to claim 1, further comprising the step of:

transmitting the received packet through a default connection toward the destination node or the source node.

8. The method according to claim 1, further comprising the steps of:

buffering the received packet from the source node to the destination node until the cut-through connection becomes useable; and

transmitting the received packet through the cut-through connection.

9. The method according to claim 1, wherein in the receiving step, a receiving node receives the packet from one of the source node, the destination node, or an upper layer of the receiving node.

10. The method according to claim 1, wherein the instructing step occurs in the node capable of initiating the set-up operation.

11. The method according to claim 1, wherein the instructing step occurs in a node different from the node capable of initiating the set-up operation.

12. The method according to claim 1, wherein the instructing step includes instructing the node capable of initiating the set-up operation to send a set-up initiation message to a node located at a boundary between logical networks and neighboring on the node capable of initiating the set-up operation.

13. The method according to claim 12, wherein the set-up initiation message includes information to be used by the neighboring node for registering a correspondence relationship between a datalink connection in a logical network and another datalink connection in another logical network.

14. The method according to claim 1, wherein the instructing step includes instructing the node capable of initiating the set-up operation to send a set-up initiation message to a server which is capable of returning information to be used for

establishing the cut-through connection.

15. The method according to claim 1, wherein the detecting step includes detecting the packet to be a trigger so that the statistical use rate of the cut-through connection to be established may exceed a predetermined rate.

16. A method for setting up a cut-through connection through which packets from a source node belonging to a logical network to a destination node belonging to another logical network are transferred, bypassing network-layer processing at at least one boundary between logical networks , comprising the steps of:

receiving a packet from the source node to the destination node or a packet from the destination node to the source node;

detecting the received packet to be a trigger according to at least one of source information and destination information of the network layer included in the received packet; and

instructing, in response to the detecting step, a node capable of initiating a set-up operation to initiate the set-up operation to establish the cut-through connection.

17. The method according to claim 16, further comprising the step of:

storing at least one address of a specified source node or a specified destination node; and wherein the detecting step detects the packet to be a trigger in case where at least one of the source information and the destination information is recognized to be in conformance with the address stored at the storing step.

18. The method according to claim 16, wherein the detecting step also uses at least one of source information and destination information of a layer higher than the network layer included in the received packet for detecting the packet to be a trigger.

19. A network node apparatus, comprising;

reception means for receiving a packet from a source node belonging to at least one logical network or an upper layer of the network node to a destination node belonging to another logical network;

detection means for detecting the packet received by the reception means to be a trigger according to at least one of source information and destination information of a network layer and/or a layer higher than the network layer included in the packet

received;

set-up means for initiating, when the detection means detects the trigger, a set-up operation to establish a cut-through connection through which packets from the source node to the destination node are transferred, bypassing network-layer processing at at least one boundary between logical networks; and

transmission means for transmitting packets destined to the destination node through the cut-through connection established according to the set-up operation initiated by the set-up means.

20. A network node apparatus, comprising;

reception means for receiving a packet from a destination node belonging to at least one logical network to a source node belonging to another logical network or an upper layer of the network node;

detection means for detecting the packet received by the reception means to be a trigger according to at least one of source information and destination information of a network layer and/or a layer higher than the network layer included in the packet received;

set-up means for initiating, when the detection means detects the trigger, a set-up operation to establish a cut-through connection through which packets from the source node to the destination node are transferred, bypassing network-layer processing at at least one boundary between logical networks; and

transmission means for transmitting packets destined to the destination node through the cut-through connection established according to the set-up operation initiated by the set-up means.

21. A network node apparatus, comprising;

first reception means for receiving a packet from a destination node belonging to at least one logical network or an upper layer of the network node to a source node belonging to another logical network;

detection means for detecting the packet received by the first reception means to be a trigger according to at least one of source information and destination information of a network layer and/or a layer higher than the network layer included in the packet received;

instruction means for instructing, when the detection means detects the trigger, a node capable of initiating a set-up operation to initiate the set-up operation to establish a cut-through connection through which packets from the source node to the

destination node are transferred, bypassing network-layer processing at at least one boundary between logical networks; and

second reception means for receiving packets transferred through the cut-through connection.

22. A network node apparatus, comprising;

first reception means for receiving a packet from a source node belonging to at least one logical network to a destination node belonging to another logical network or an upper layer of the network node;

detection means for detecting the packet received by the first reception means to be a trigger according to at least one of source information and destination information of a network layer and/or a layer higher than the network layer included in the packet received;

instruction means for instructing, when the detection means detects the trigger, a node capable of initiating a set-up operation to initiate the set-up operation to establish a cut-through connection through which packets from the source node to the destination node are transferred, bypassing network-layer processing at at least one boundary between logical networks; and

second reception means for receiving packets transferred through the cut-through connection.